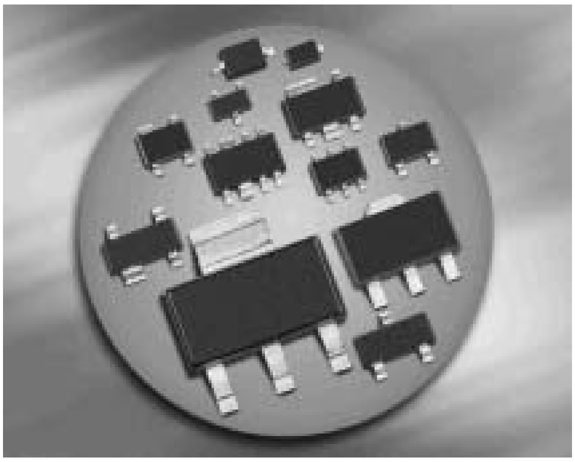
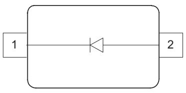
Silicon Schottky Diode

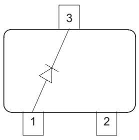


- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing
- BAS70-04S: For orientation in reel see package information below

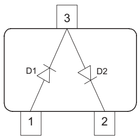
BAS170W
BAS70-02L
BAS70-02W



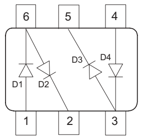
BAS70



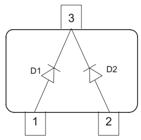
BAS70-04
BAS70-04W



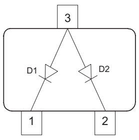
BAS70-04S



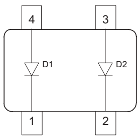
BAS70-05
BAS70-05W



BAS70-06
BAS70-06W



BAS70-07
BAS70-07W
BAS70-07L4



Type	Package	Configuration	L_S(nH)	Marking
BAS170W	SOD323	single	1.8	white 7
BAS70	SOT23	single	1.8	73s
BAS70-02L	TSLP-2-1	single, leadless	0.4	F
BAS70-02W	SCD80	single	0.6	73
BAS70-04	SOT23	series	1.8	74s
BAS70-04S	SOT363	dual series	1.6	74s
BAS70-04W	SOT323	series	1.4	74s
BAS70-05	SOT23	common cathode	1.8	75s
BAS70-05W	SOT323	common cathode	1.4	75s
BAS70-06	SOT23	common anode	1.8	76s
BAS70-06W	SOT323	common anode	1.4	76s
BAS70-07	SOT143	parallel pair	2	77s
BAS70-07L4	TSLP-4-4	parallel pair, leadless	0.4	E
BAS70-07W	SOT343	parallel pair	1.8	77s

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	70	V
Forward current	I_F	70	mA
Non-repetitive peak surge forward current t ≤ 10ms	I_{FSM}	100	
Total power dissipation	P_{tot}		mW
BAS70, BAS70-07, T_S ≤ 72 °C		250	
BAS70-02L, BAS70-07L4, T_S ≤ 117 °C		250	
BAS70-02W, T_S ≤ 107 °C		250	
BAS70-04, BAS70-06, T_S ≤ 48 °C		250	
BAS70-04S/W/-06W, BAS170W, T_S ≤ 97 °C		250	
BAS70-05, T_S ≤ 22 °C		250	
BAS70-05W, T_S ≤ 90 °C		250	
BAS70-07W, T_S ≤ 114 °C		250	
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAS70, BAS70-07		≤ 310	
BAS70-02L, BAS70-07L4		≤ 130	
BAS70-02W		≤ 170	
BAS70-04, BAS70-06		≤ 410	
BAS70-04S/W, BAS70-06W		≤ 210	
BAS70-05		≤ 510	
BAS70-05W		≤ 240	
BAS70-07W		≤ 145	
BAS170W		≤ 190	

[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

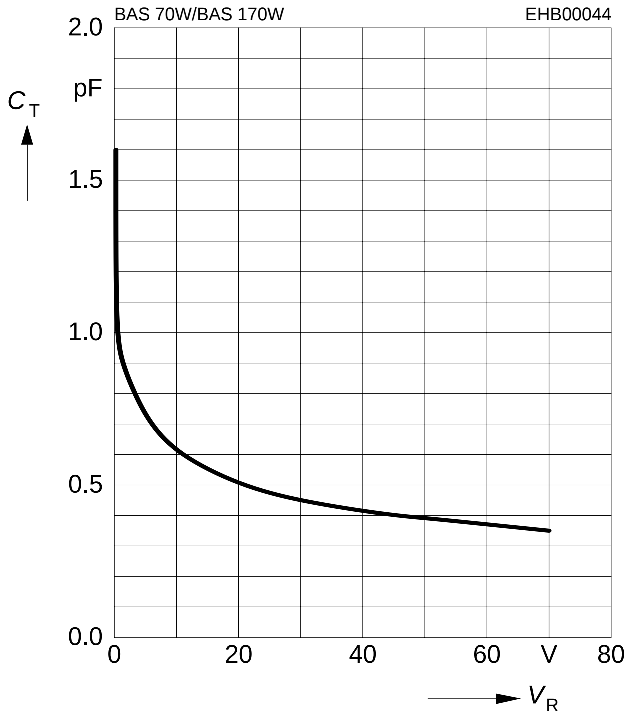
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 10 µA	$V_{(BR)}$	70	-	-	V
Reverse current V_R = 50 V	I_R	-	-	0.1	µA
Forward voltage I_F = 1 mA I_F = 10 mA I_F = 15 mA	V_F	 300 600 720	 375 705 880	 410 750 1000	mV
Forward voltage matching[1)] I_F = 10 mA	ΔV_F	-	-	20	
AC Characteristics					
Diode capacitance V_R = 0 , f = 1 MHz	C_T	-	1.5	2	pF
Forward resistance I_F = 10 mA, f = 10 kHz	r_f	-	34	-	Ω
Charge carrier life time I_F = 25 mA	τ_{rr}	-	-	100	ps

[1]ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

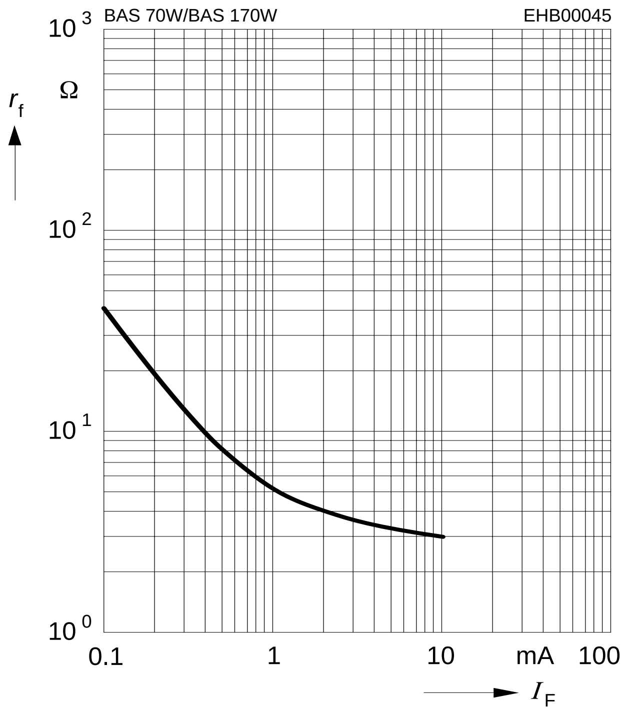
Diode capacitance $C_T = f\ (V_R)$

f = 1MHz



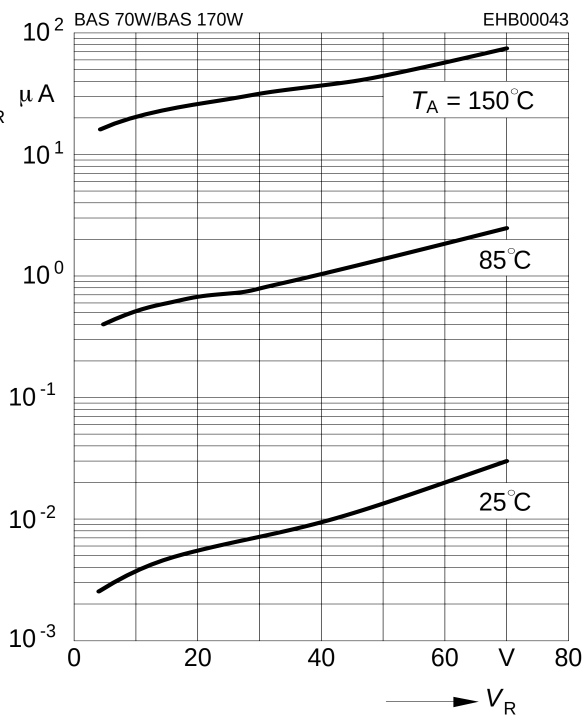
Forward resistance $r_f = f\ (I_F)$

f = 10 kHz



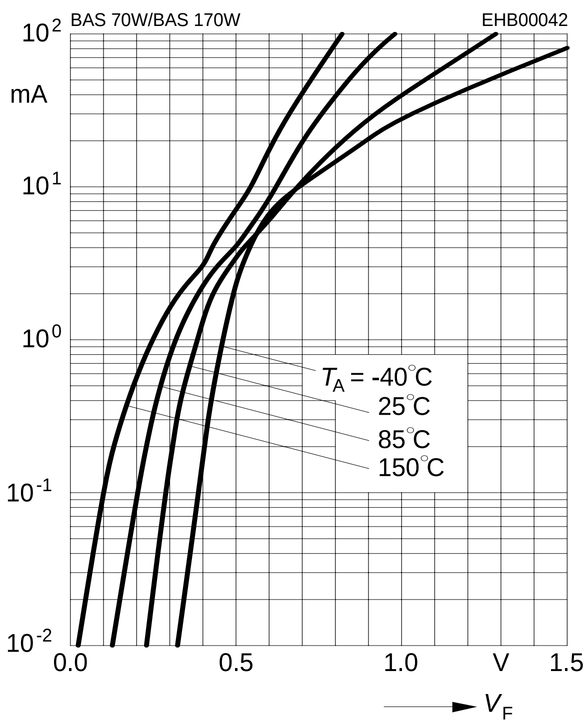
Reverse current $I_R = f(V_R)$

T_A = Parameter



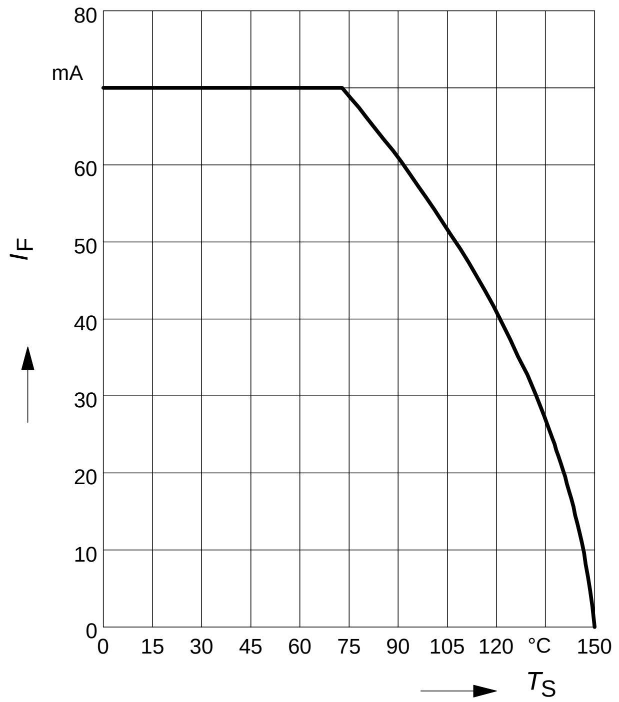
Forward current $I_F = f\ (V_F)$

T_A = Parameter



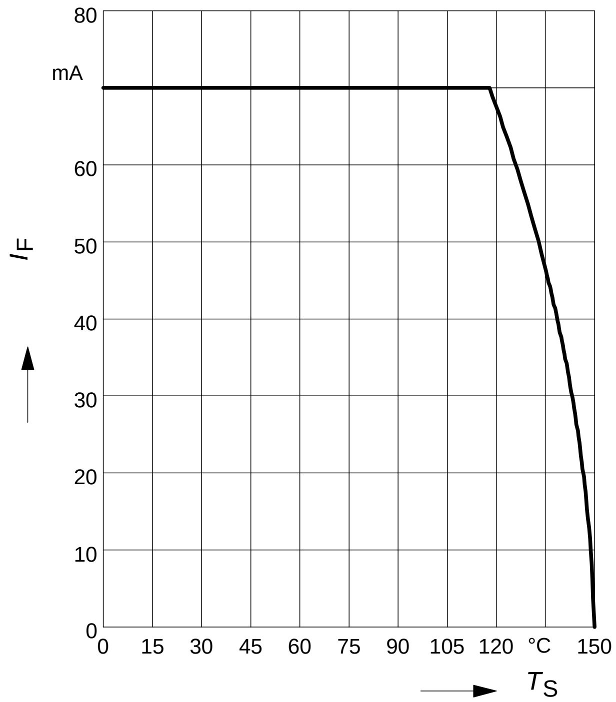
Forward current $I_F = f(T_S)$

BAS70, BAS70-07



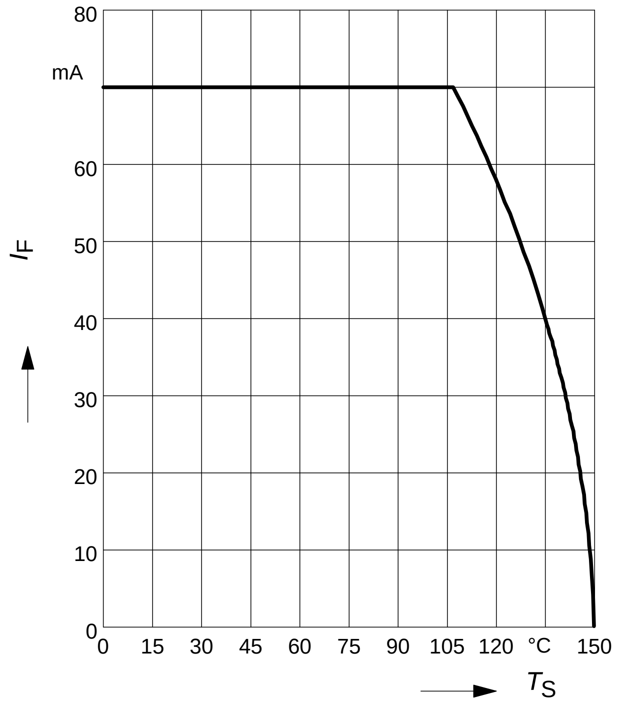
Forward current $I_F = f(T_S)$

BAS70-02L, BAS70-07L4



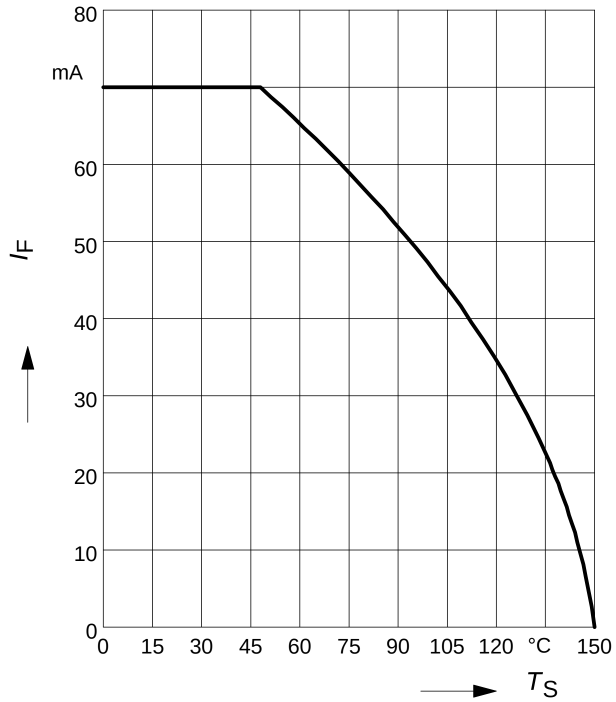
Forward current $I_F = f(T_S)$

BAS70-02W

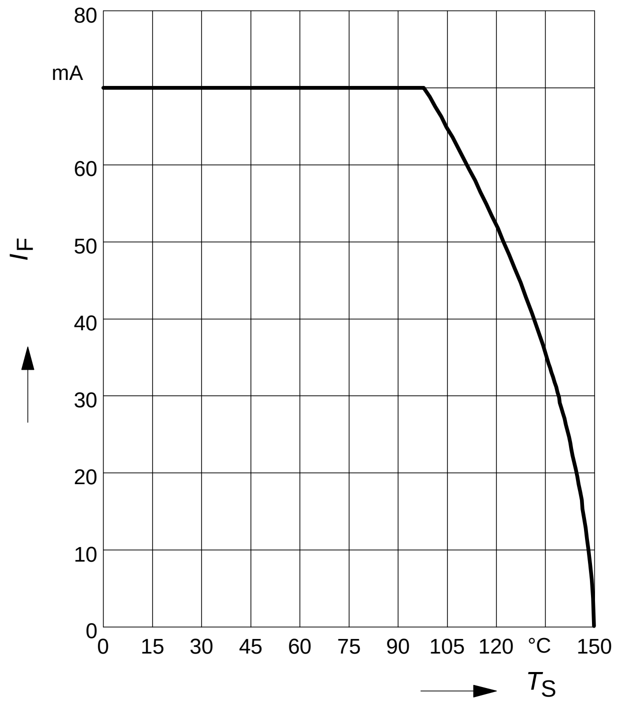


Forward current $I_F = f(T_S)$

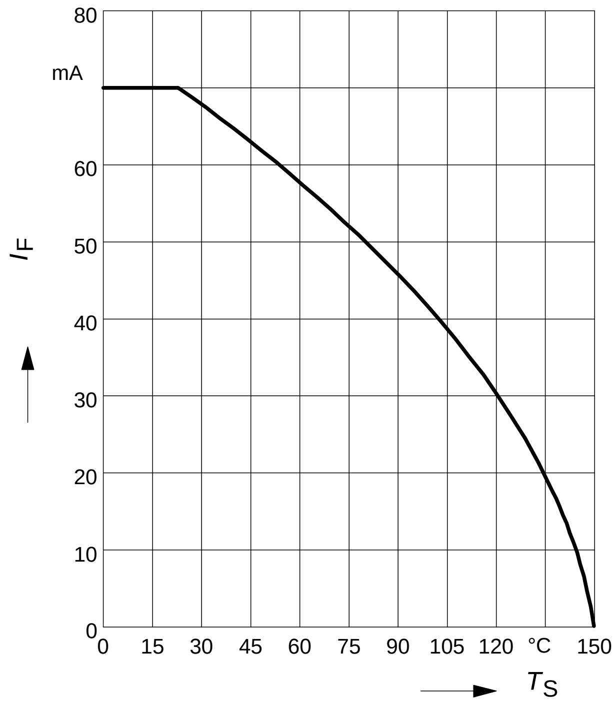
BAS70-04, BAS70-06



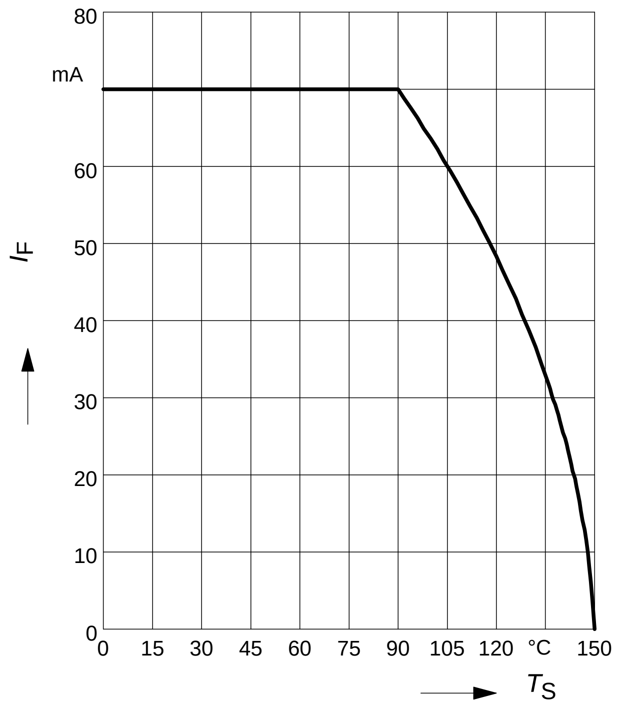
Forward current $I_F = f\ (T_S)$
BAS70-04S/W, BAS70-06W, BAS170W



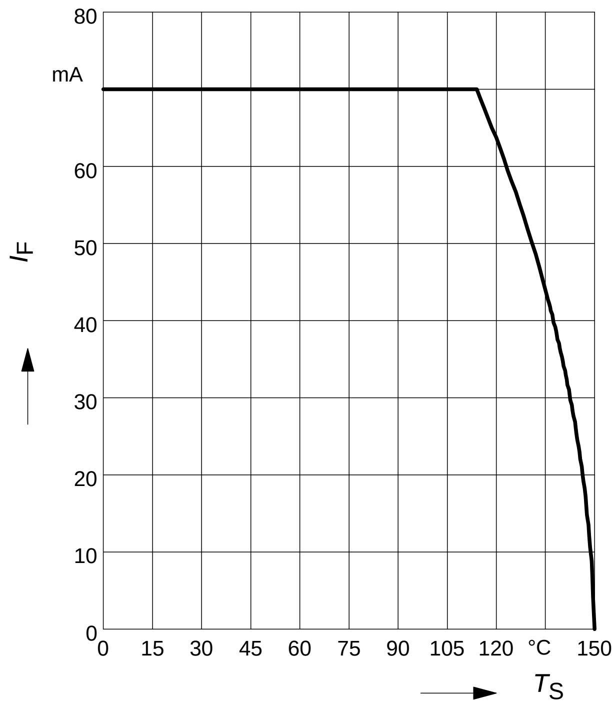
Forward current $I_F = f\ (T_S)$
BAS70-05



Forward current $I_F = f\ (T_S)$
BAS70-05W

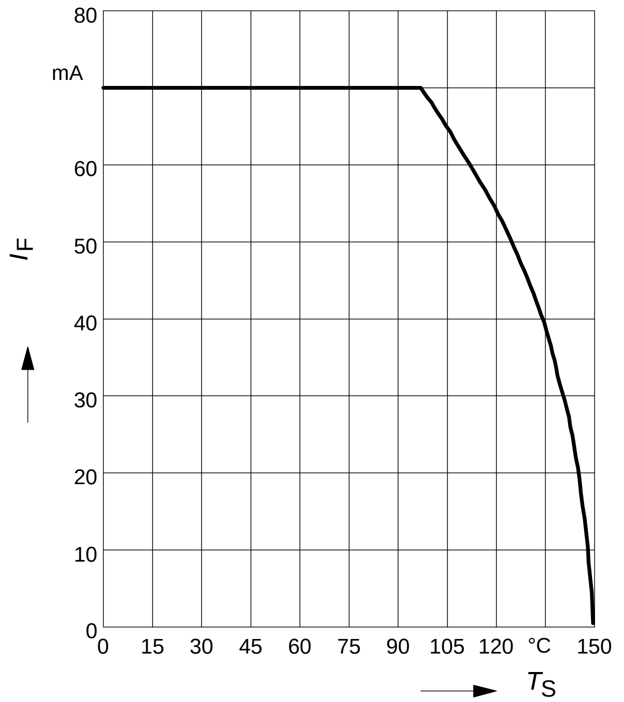


Forward current $I_F = f\ (T_S)$
BAS70-07W



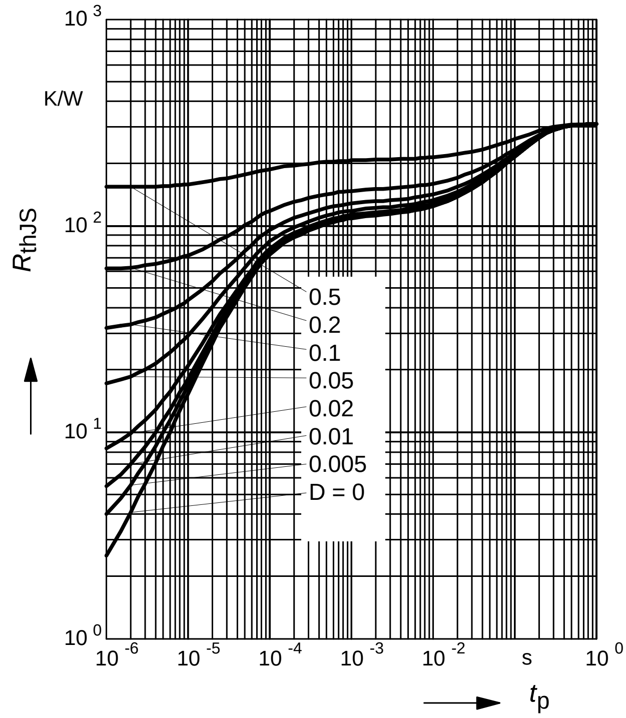
Forward current $I_F = f(T_S)$

BAS170W



Permissible Puls Load $R_{thJS} = f(t_p)$

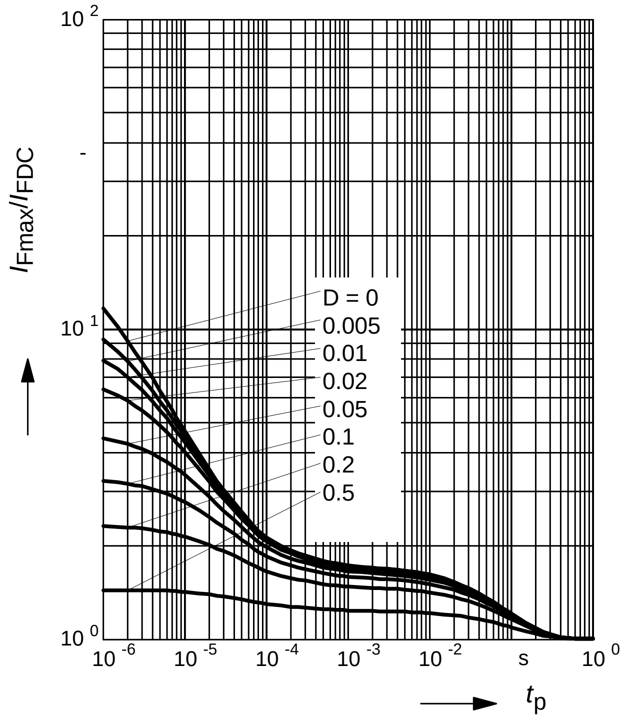
BAS70



Permissible Pulse Load

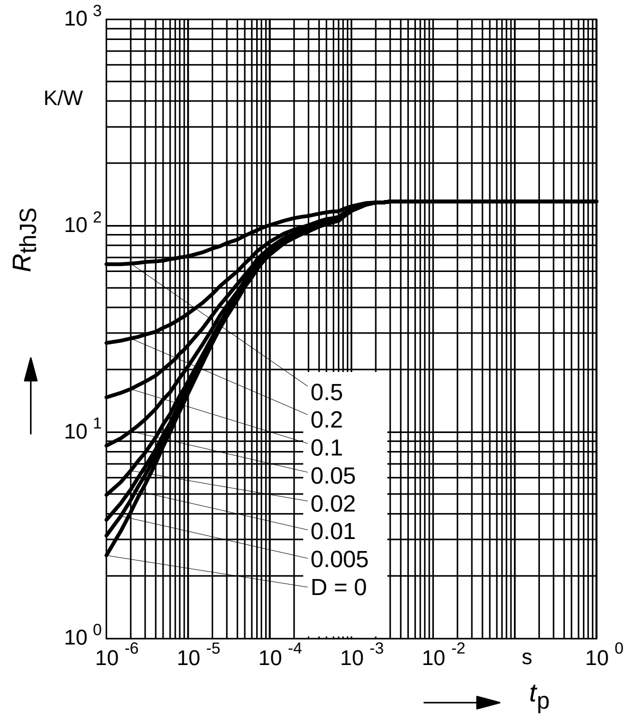
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70



Permissible Puls Load $R_{thJS} = f(t_p)$

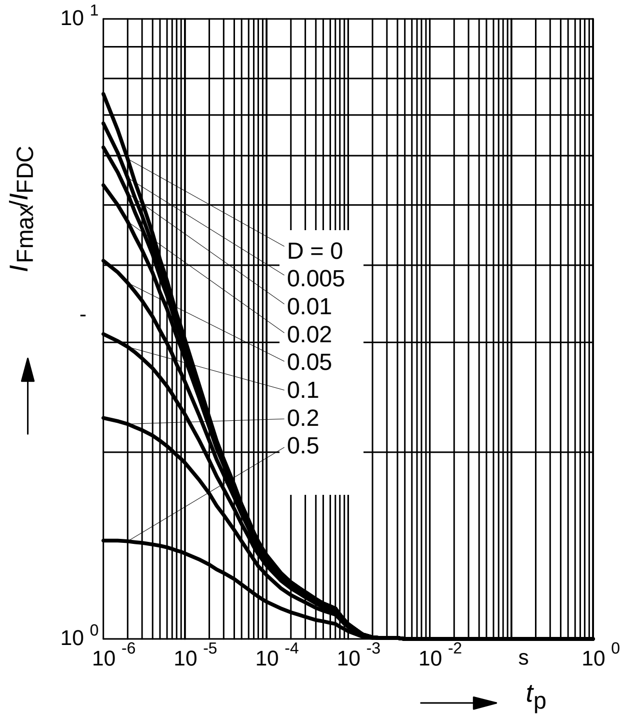
BAS70-02L, BAS70-07L4



Permissible Pulse Load

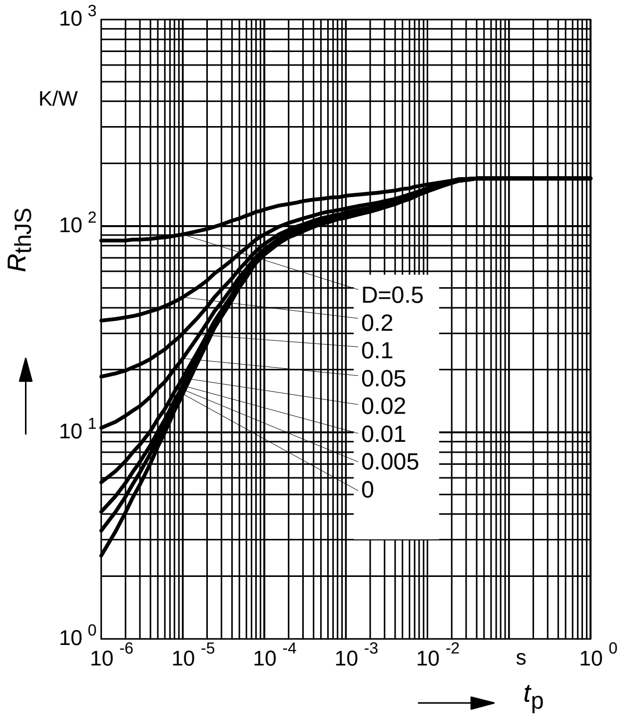
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-02L, BAS70-07L4



Permissible Puls Load $R_{thJS} = f\ (t_p)$

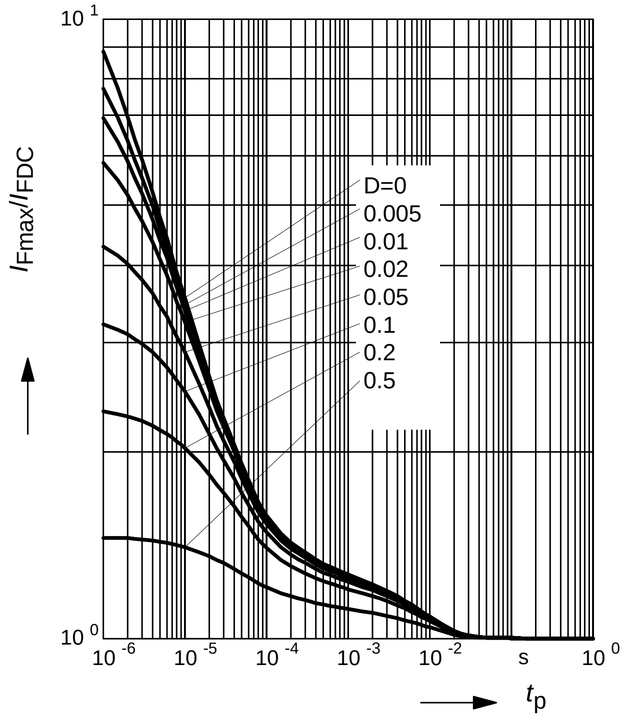
BAS70-02W



Permissible Pulse Load

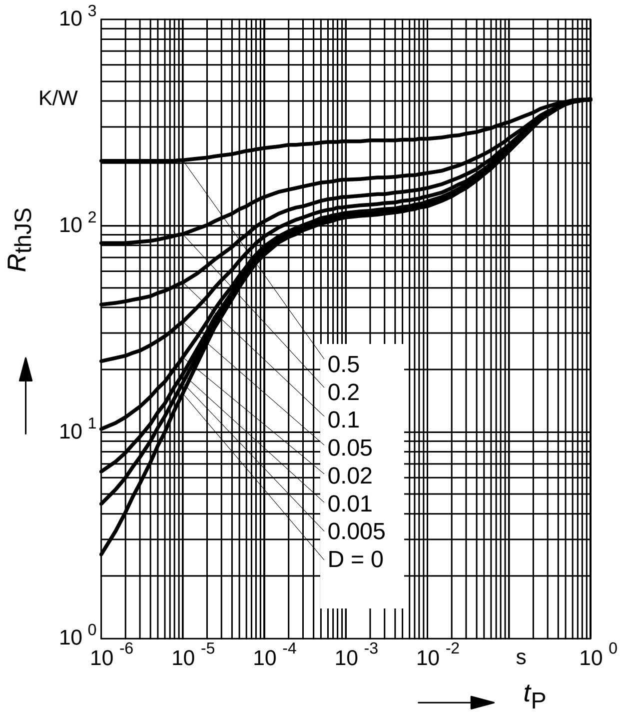
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-02W



Permissible Puls Load $R_{thJS} = f\ (t_p)$

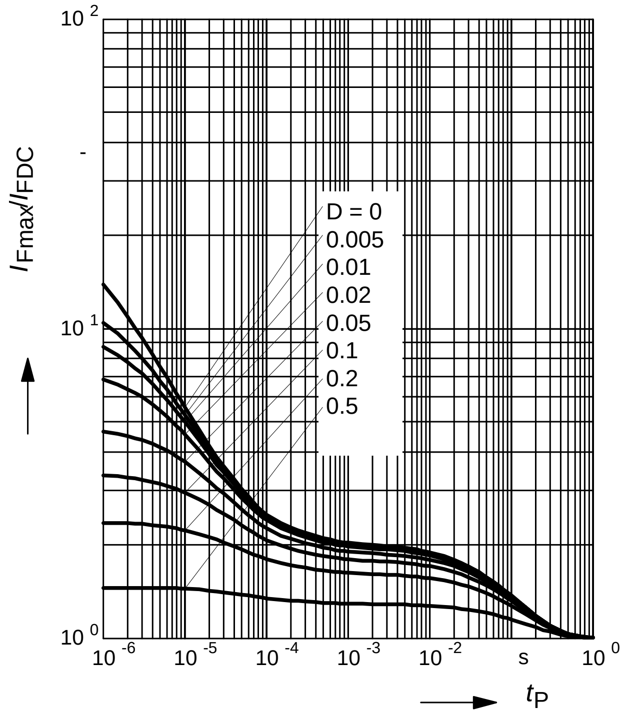
BAS70-04, BAS70-06



Permissible Pulse Load

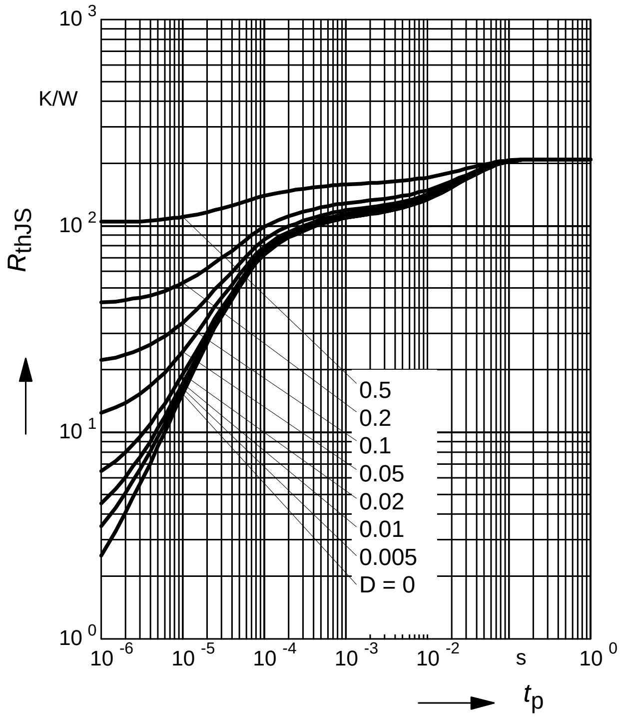
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-04, BAS70-06



Permissible Puls Load $R_{thJS} = f\ (t_p)$

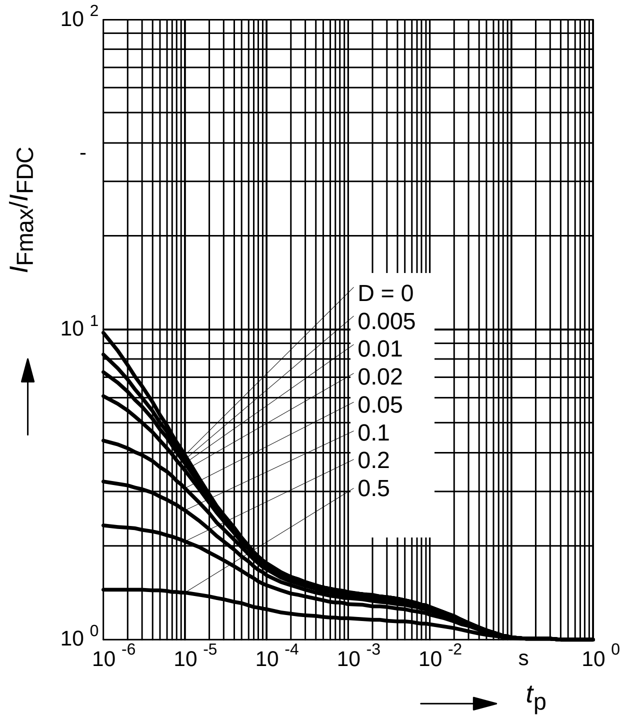
BAS70-04S



Permissible Pulse Load

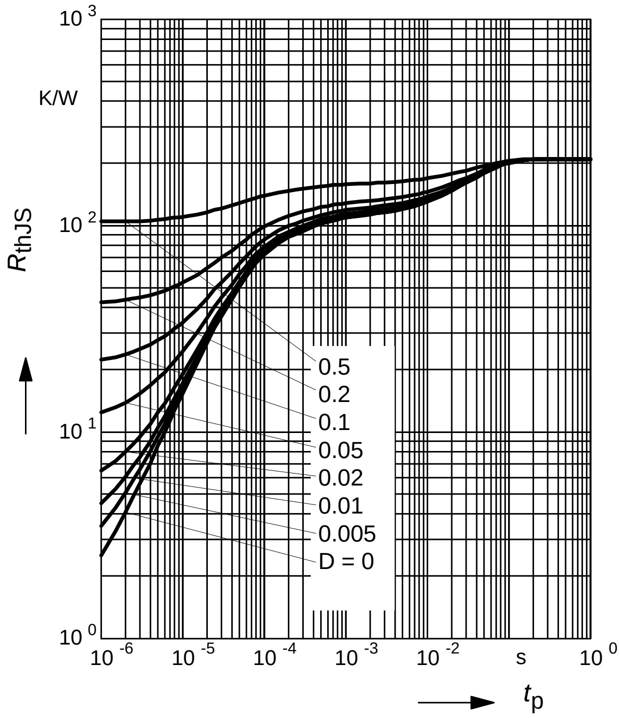
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-04S



Permissible Puls Load $R_{thJS} = f\ (t_p)$

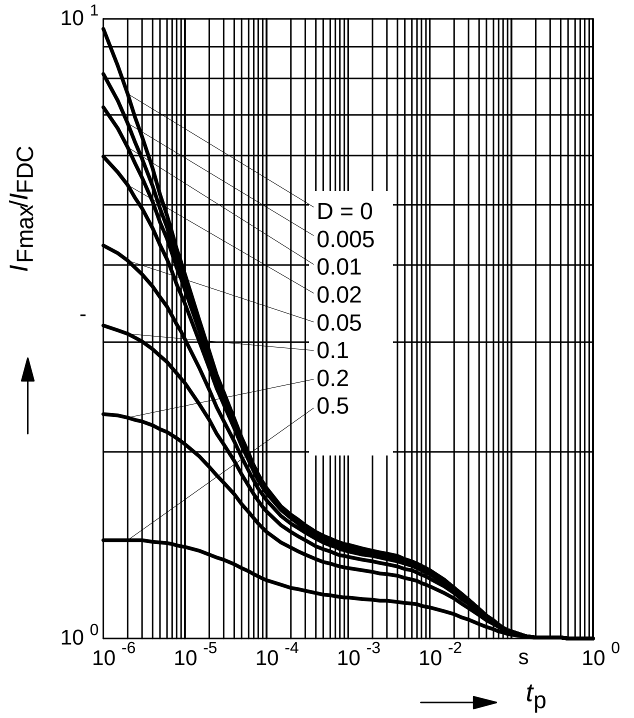
BAS70-04W, BAS70-06W



Permissible Pulse Load

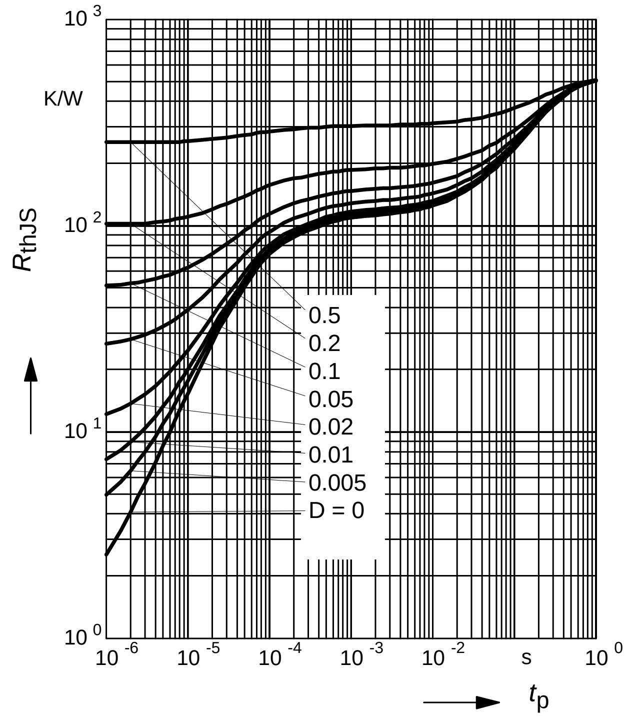
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-04W, BAS70-06W



Permissible Puls Load $R_{thJS} = f\ (t_p)$

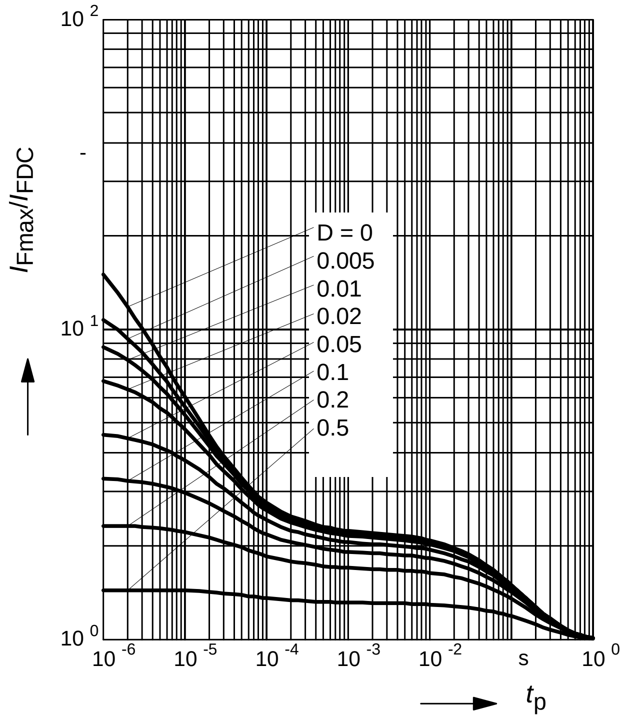
BAS70-05



Permissible Pulse Load

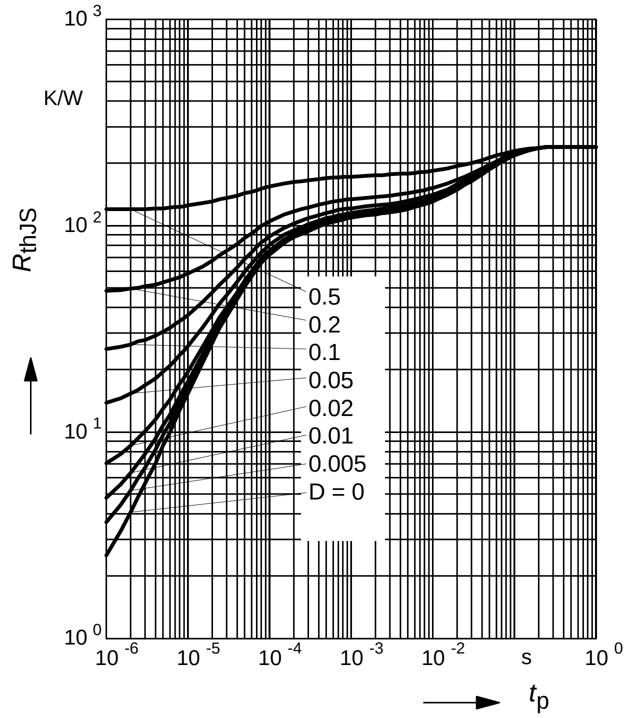
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-05



Permissible Puls Load $R_{thJS} = f\ (t_p)$

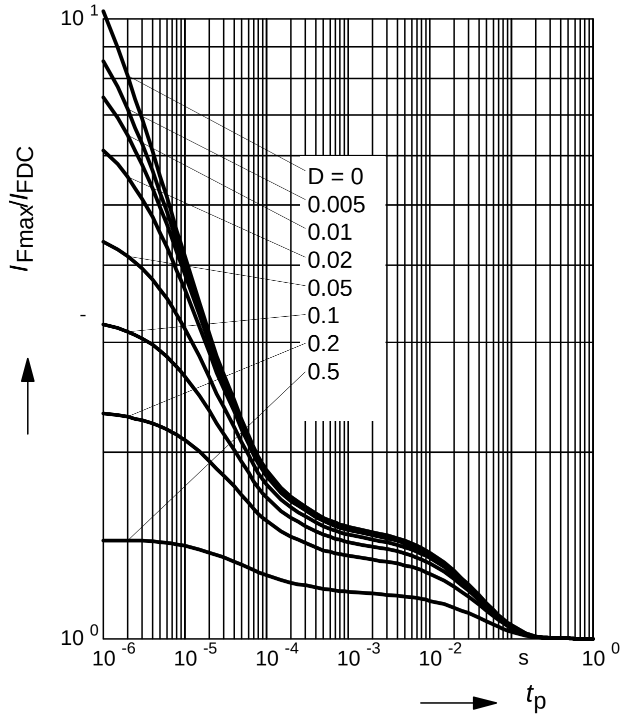
BAS70-05W



Permissible Pulse Load

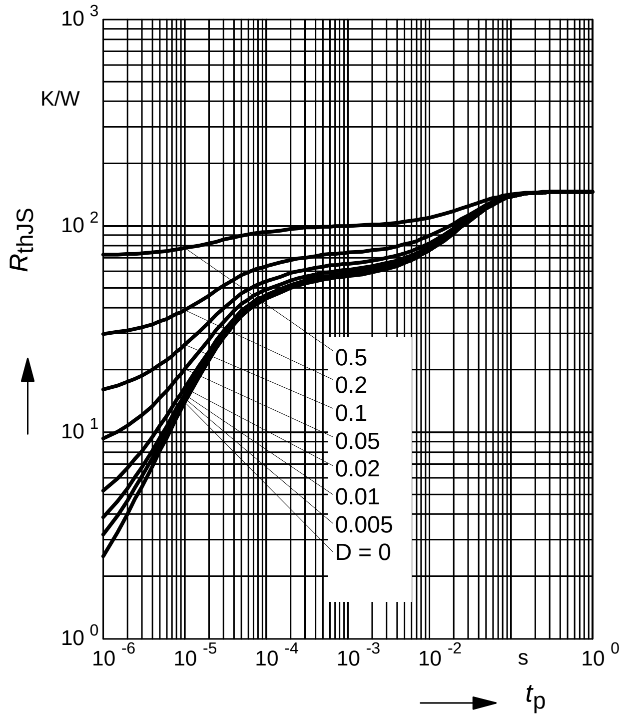
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-05W



Permissible Puls Load $R_{thJS} = f\ (t_p)$

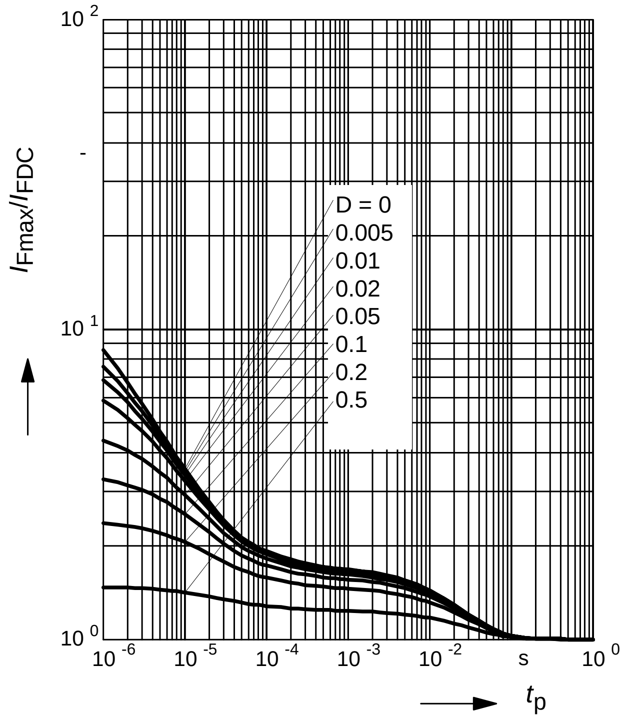
BAS70-07W



Permissible Pulse Load

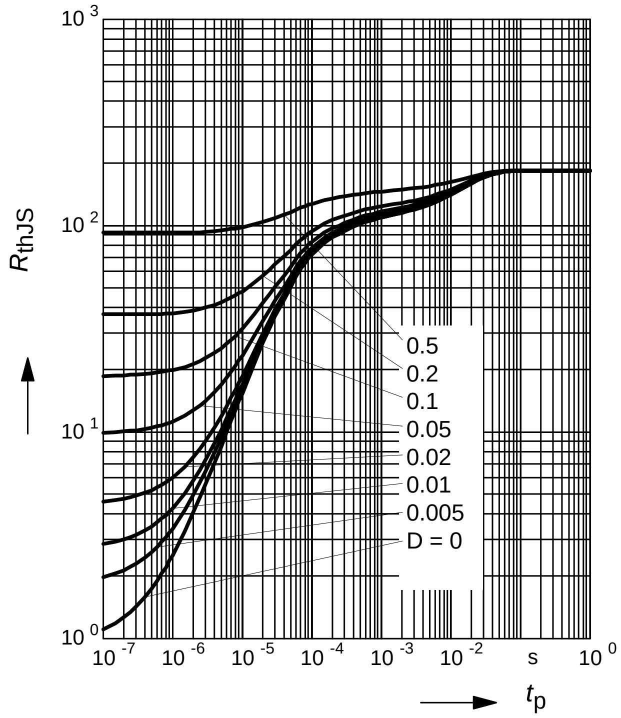
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAS70-07W



Permissible Puls Load $R_{thJS} = f\ (t_p)$

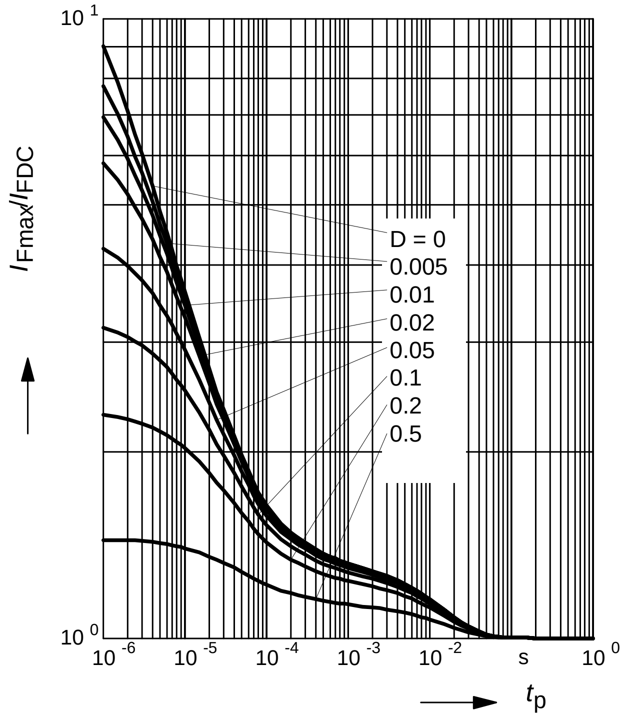
BAS170W



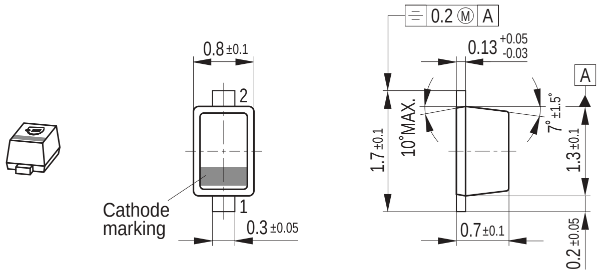
Permissible Pulse Load

$I_{Fmax}/ I_{FDC} = f\ (t_p)$

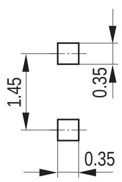
BAS170W



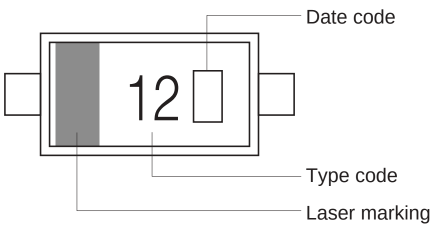
Package Outline

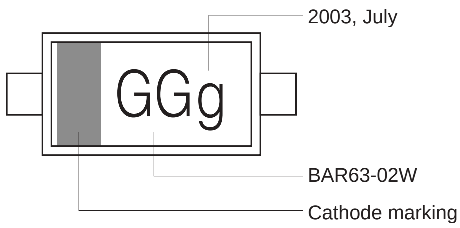


Foot Print



Marking Layout

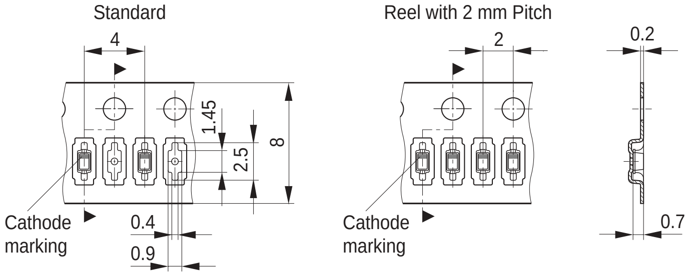




Example

Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)
Reel ø330 mm = 10.000 Pieces/Reel



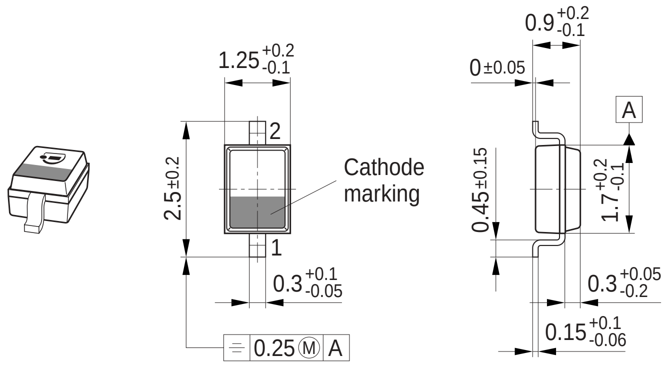
Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1)]) CES-Code

Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	j	y	J	Y
10	k	z	K	Z	k	z	K	Z	k	z	K	Z
11	l	2	L	4	l	2	L	4	l	2	L	4
12	n	3	N	5	n	3	N	5	n	3	N	5

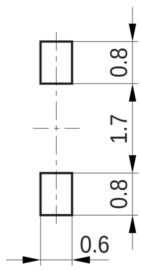
1) New Marking Layout for SC75, implemented at October 2005.

.

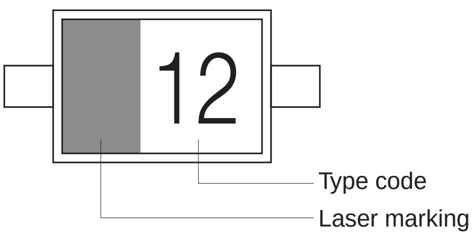
Package Outline

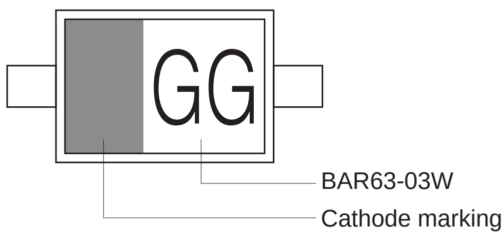


Foot Print



Marking Layout

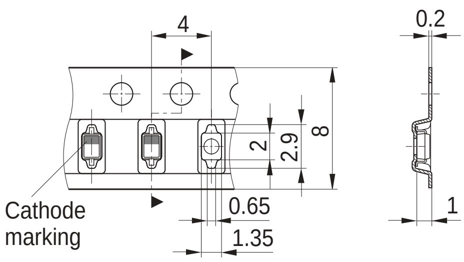




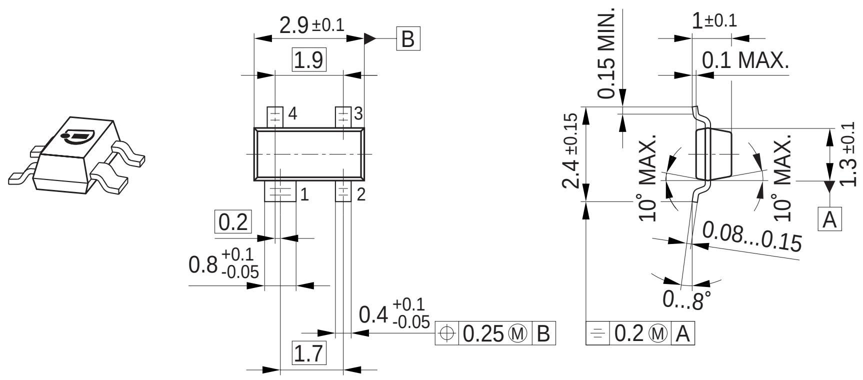
Example

Standard Packing

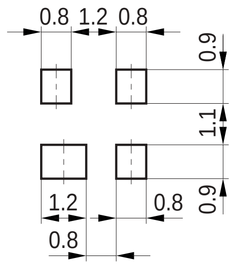
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



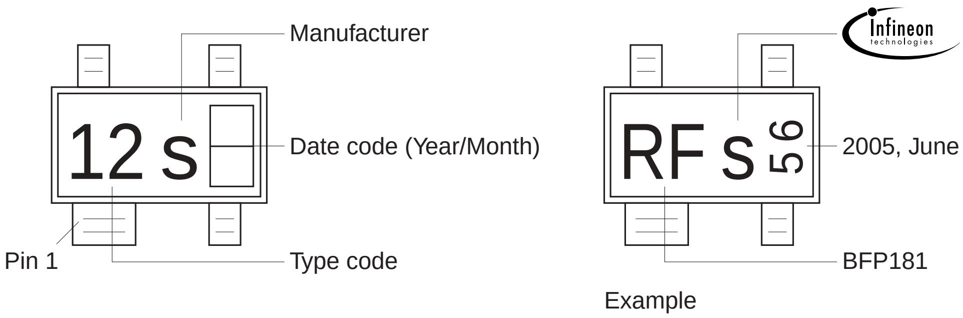
Package Outline



Foot Print

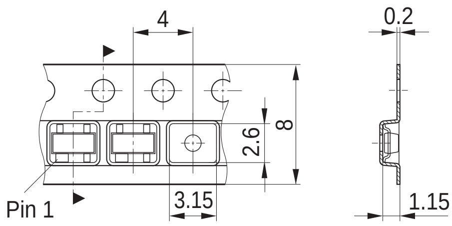


Marking Layout

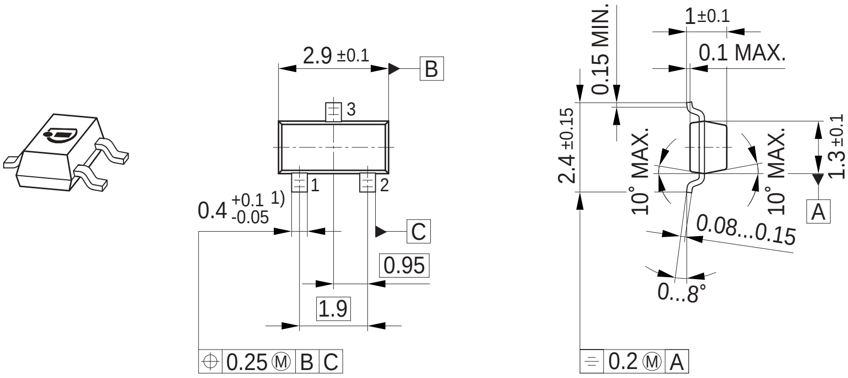


Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel

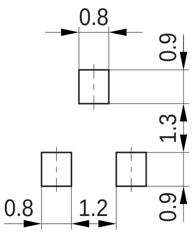


Package Outline

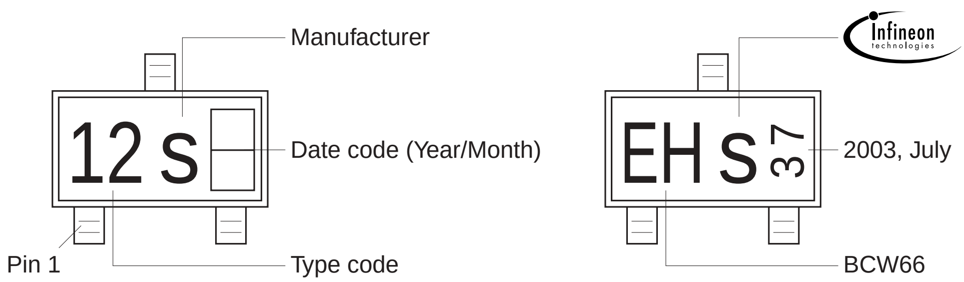


1) Lead width can be 0.6 max. in dambar area

Foot Print



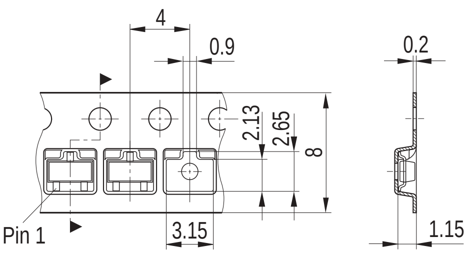
Marking Layout



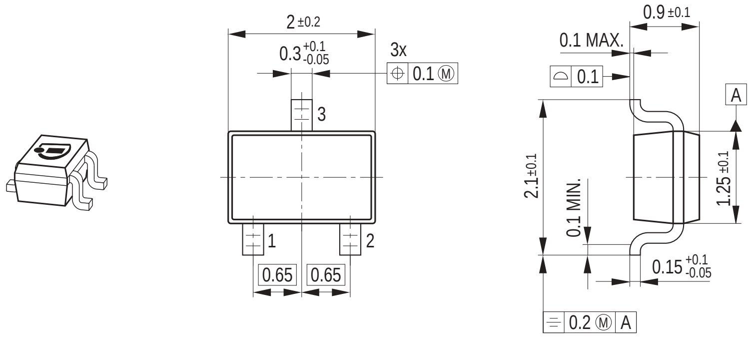
Example

Standard Packing

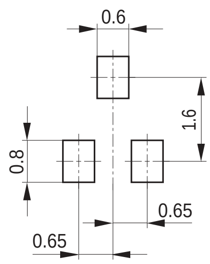
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



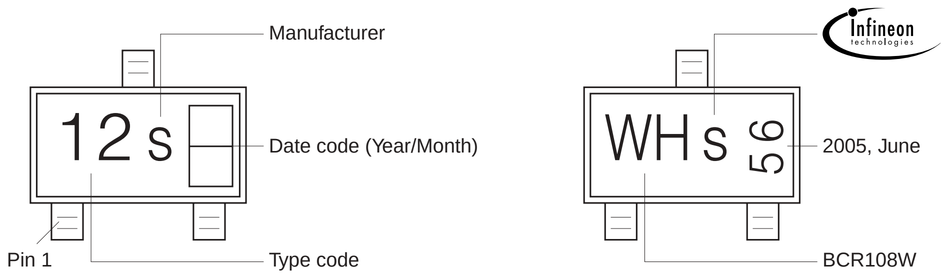
Package Outline



Foot Print



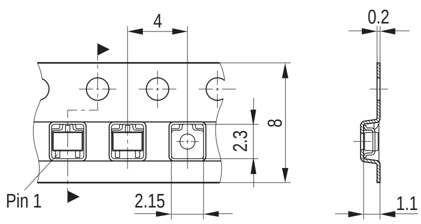
Marking Layout



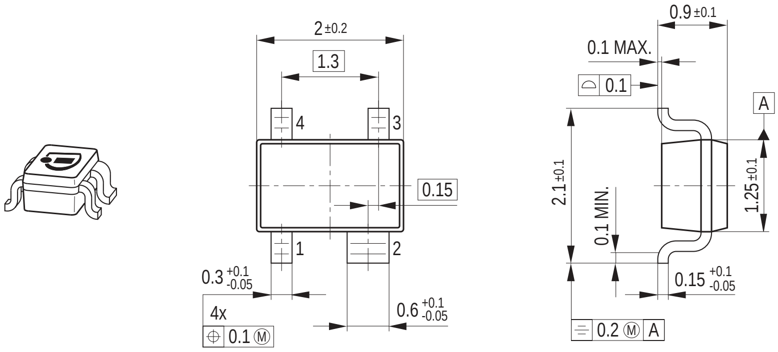
Example

Standard Packing

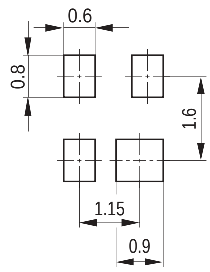
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



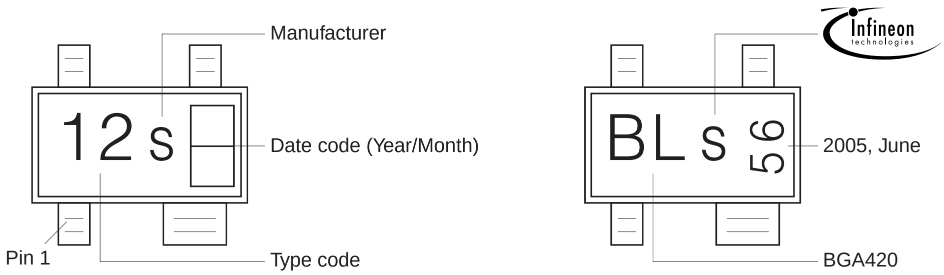
Package Outline



Foot Print



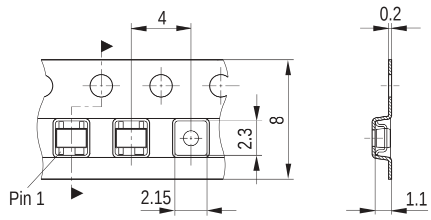
Marking Layout



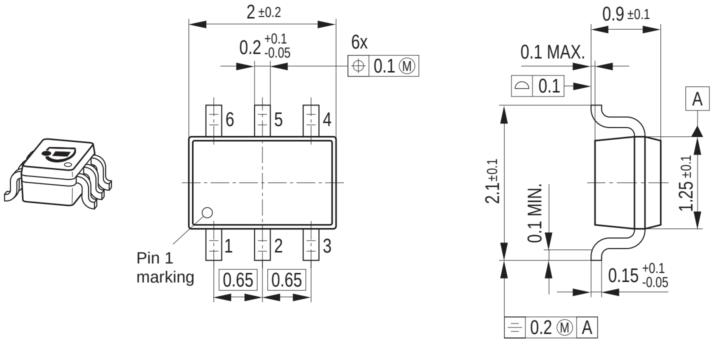
Example

Standard Packing

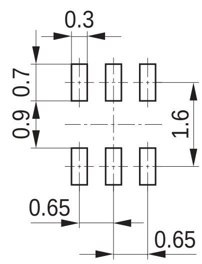
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



Package Outline

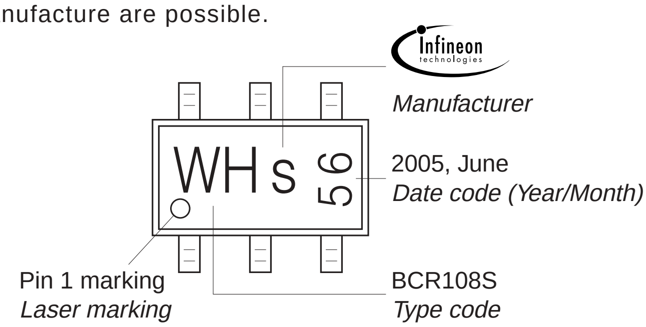


Foot Print



Marking Layout (Example)

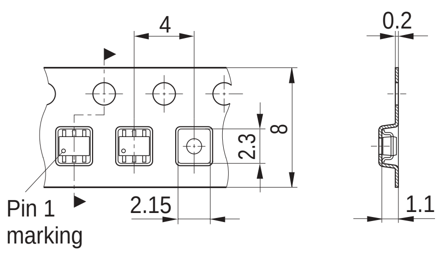
Small variations in positioning of
Date code, Type code and Manufacture are possible.



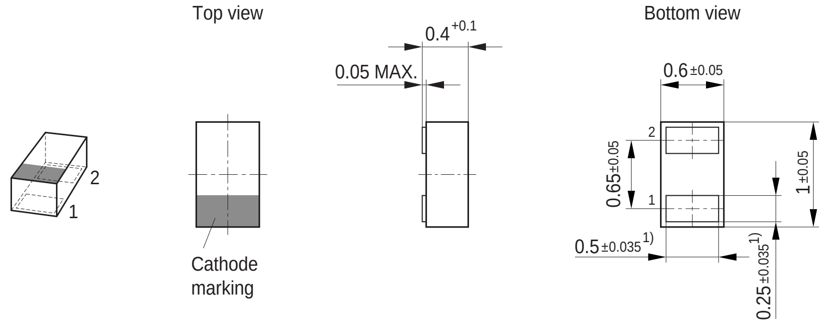
Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel

For symmetric types no defined Pin 1 orientation in reel.



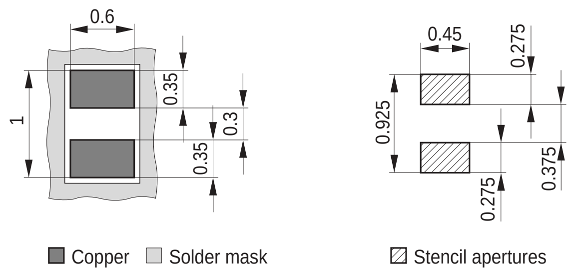
Package Outline



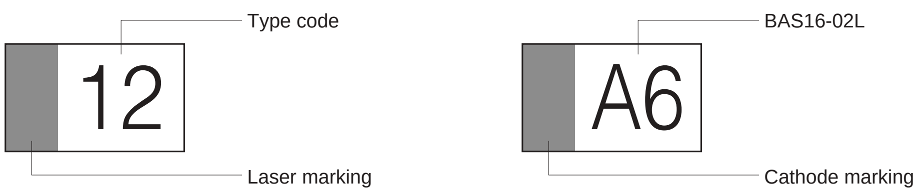
1) Dimension applies to plated terminal

Foot Print

For board assembly information please refer to Infineon website "Packages"



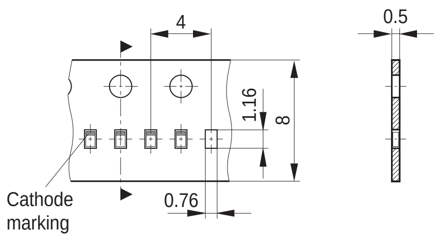
Marking Layout



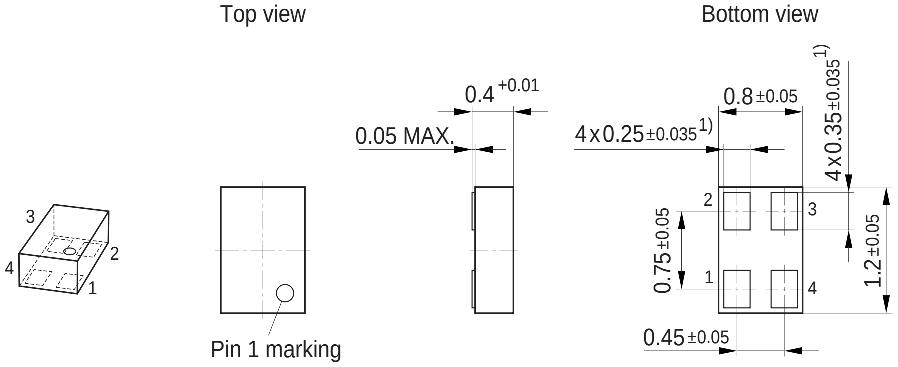
Example

Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



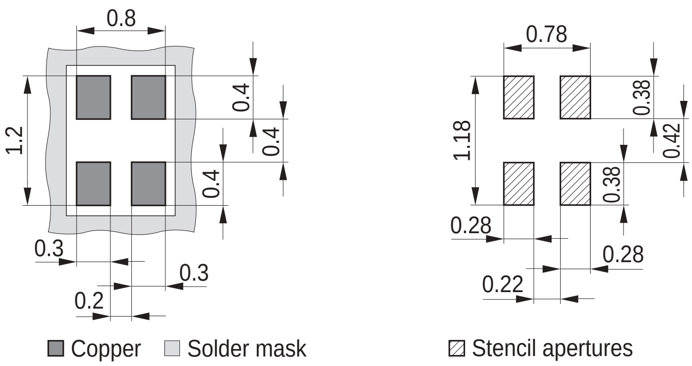
Package Outline



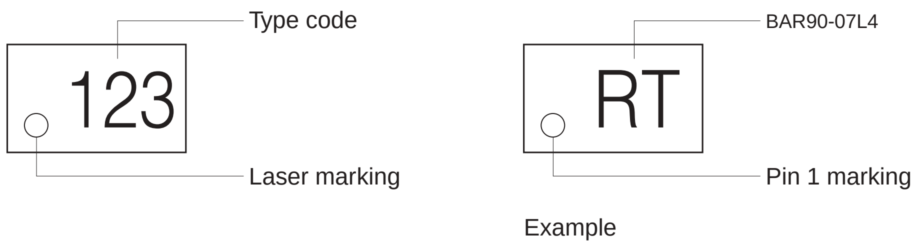
1) Dimension applies to plated terminal

Foot Print

For board assembly information please refer to Infineon website "Packages"

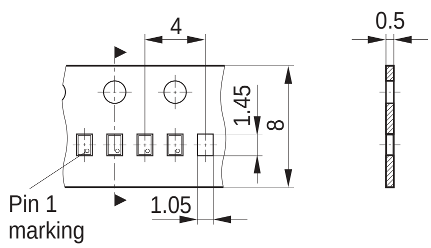


Marking Layout



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



Published by Infineon Technologies AG,
81726 München

Attention please!

The information herein is given to describe certain components and shall not be considered as a guarantee of characteristics.
Terms of delivery and rights to technical change reserved.
We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.Infineon.com).

Warnings

Due to technical requirements components may contain dangerous substances.
For information on the types in question please contact your nearest Infineon Technologies Office.
Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system.
Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.